

CONNECTING COMPLEX WORKFLOWS

To Enable Faster and More Efficient Highway Construction

When a major general contractor won the bid to develop 50km of a new autoroute in Southern Europe, involving both the widening of existing lanes and the creation of several kilometers of new road, its project team faced a complex problem.

How can the margin calculated during the bid be achieved with unpredictable and escalating fuel prices, and an increasing shortage of labor and machines?

To solve this dilemma, they turned to Digital Construction Works (DCW). DCW has developed innovative and integrated workflows connecting the field to the office, enabling faster and more effective project management.

DCW's Integrations Platform ensures that field crews and project planners work as an integrated team, with up-to-date and accurate information always available at everyone's fingertips.

DCW assisted the general contractor to migrate from outdated communication methodologies, such as e-mail and status updates by phone, to automated workflows for exchanging design, schedule task, and production data. These automated workflows are then visualized in near real-time in dashboards that show essential project information required to address the ever-changing costs of doing business.

THE SOLUTION

By deploying DCW's Integrated Highways Workflow, it was possible to integrate Bentley Systems' OpenRoads Designer (via ProjectWise), SYNCHRO 4D for model distribution and simulations, with Topcon Positioning Systems' MAGNET Project and Sitelink3D for mass haul planning and the monitoring of machine control enabled grading operations. Tierra Blend+ was further integrated to provide fuel consumption and CO2 emission data for all connected machines. Connecting the job site to the office in one continuous feedback loop provided the digital delivery of real-time progress tracking by comparing the construction plan to the actual earthwork status provided by the field equipment and personnel.



“It was a game changer when DCW connected all of the various systems used on the project because the workflow provided near real-time insights that enabled quicker decisions and scheduling agility.”

“We needed to get the right information, to the right people, at the right time, and DCW helped us do just that.”

— A Senior Project Manager from the General Contractor

In addition, by embedding [DCW's Proprietary Power BI Construction Connector](#), DCW further enabled the general contractor to organize all of their data sources into centralized charts, graphs, reports, and visualizations to improve communication of project progress.

The integrations provided the general contractor with an automated workflow that incorporated multiple stakeholders, enabled automated digital handovers, and improved the quality of project delivery.

Instant job site feedback or Construction Progress Tracking also allowed the subcontractor working for the general contractor to review and approve the information they wanted to push back digitally, further improving efficiency and minimizing data loss. It removed the need for double entry, saving valuable time. Integration of multiple third-party software applications and automated workflows also enabled real-time job site decision-making to avoid rework allowing the customers to communicate with subcontractors doing the work in a much more efficient and automated way.

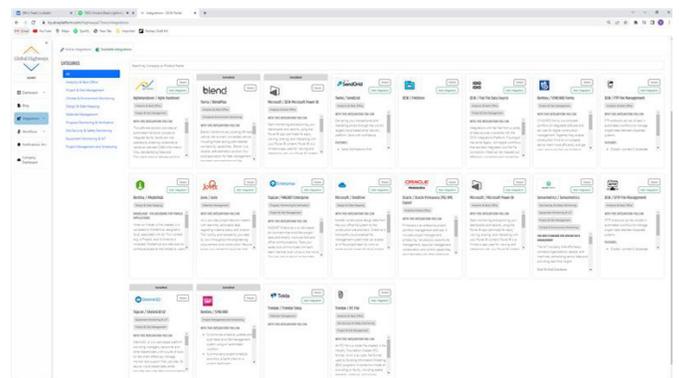
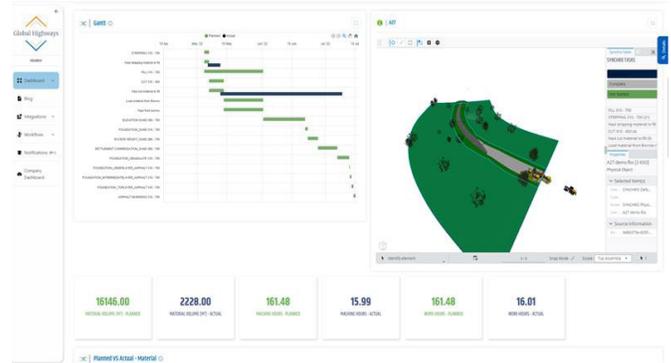
INTEGRATIONS

Using the DCW Integrations Platform as the central project portal, DCW integrated:

- Bentley Systems OpenRoads Designer for constructible design (via ProjectWise)
- Bentley Systems SYNCHRO for creating 4D Plans
- Bentley iTwin technology to view published iModels
- Topcon MAGNET Project to optimize the Mass Haul Schedule
- Topcon Sitelink3D to sync tasks and actuals back to Bentley SYNCHRO
- Tierra Blend+ for fuel consumption and CO2 emission data
- DCW Power BI Construction Connector

BENEFITS

- Complete insight into actual project status, always available, updated in near real-time
- Tasks and models are updated automatically on site. Actuals from the site are then updated automatically in the scheduling system
- Real-time insight into fuel consumption and CO₂ emissions
- Greater efficiency and visibility for improved project execution



“Measuring our fuel consumption and CO₂ footprint as part of this integrated workflow on future projects will improve our ability to meet new challenging environmental requirements.

Based on the intelligence we could extract on this project, I would not hesitate to utilize DCW and their platform on further highway projects where multiple applications and job site equipment need to be connected.”

— A Senior Project Manager from the General Contractor

For more information about Digital Construction Works, visit: digitalconstructionworks.com